Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Call Authentication Trust Anchor	)	WC Docket No. 17-97
	)	

COMMENTS OF COMCAST CORPORATION

Comcast Corporation ("Comcast") submits these comments in response to the Notice of Inquiry ("NOI") adopted on July 13, 2017 in the above-captioned proceeding.[1]

INTRODUCTION AND SUMMARY

The NOI represents a laudable next step in the Commission's ongoing efforts to combat illegal robocalls that rely on "spoofed" caller ID information. As Comcast has explained,[2] and as the NOI appropriately acknowledges,[3] illegal spoofed robocalls are a significant and growing problem; they cause clear harm to consumers who fall victim to the scams perpetrated by these callers, and impose substantial network costs on Comcast and other voice providers. One prominent industry observer estimates that "[o]ver 42 percent of all calls made to landlines are . . . illegal unwanted robocalls,"[4] and a sizeable portion of these calls appear to entail the spoofing of caller ID information in an effort to deceive consumers.

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1 *See Call Authentication Trust Anchor*, WC Docket No. 17-97, Notice of Inquiry, FCC 17-89 (rel. Jul. 14, 2017) ("NOI").

2 *See* Comments of Comcast Corporation, CG Docket No. 17-59, at 1-2 (filed Jul. 3, 2017) ("Comcast Robocall Blocking Comments").

3 *See* NOI ¶¶ 3-4.

4 Rebecca Russell, *Spike in "Robocalls" Reported Across the Country*, Fox 17 Online, May 16, 2017, *available at* http://fox17online.com/2017/05/16/spike-in-robocalls-reported-across-the-country/ (quoting Aaron Foss, founder of Nomorobo).

As noted in Comcast's comments in response to the Commission's *Robocall Blocking NPRM/NOI*, the SHAKEN (Signature-based Handling of Asserted Information Using toKENs) and STIR (Secure Telephone Identity Revisited) framework currently represents the most promising way of addressing illegal spoofed robocalls in a comprehensive and robust manner.[5] The reports issued by the Robocall Strike Force explain that the SHAKEN/STIR framework "holds considerable promise for repressing the presence of robocalling in the communications ecosystem," as it will "provide a basis for verifying calls, classifying calls, and facilitating the ability to trust caller identity end to end."[6] Additionally, the framework "has broad industry support, having been approved by both ATIS and SIP Forum under their respective transparent, consensus-based approval processes."[7]

Comcast welcomes the Commission's effort to dive deeper into specific aspects of the SHAKEN/STIR framework in this proceeding. The NOI asks relevant questions about the development of the framework, the governance structure for implementation of the framework, and the appropriate role for the Commission in facilitating adoption of the framework. As discussed herein, the industry has already made significant progress in developing, testing, and planning the implementation of the SHAKEN/STIR framework.[8] And while voice providers of

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5 *See* Comcast Robocall Blocking Comments at 6-8; *see also Advanced Methods to Target and Eliminate Unlawful Robocalls*, Notice of Proposed Rulemaking and Notice of Inquiry, 32 FCC Rcd 2306 (2017) ("*Robocall Blocking NPRM/NOI*").

6 Robocall Strike Force, *Robocall Strike Force Report*, at 5 (rel. Oct. 26, 2016), *available at* https://transition.fcc.gov/cgb/Robocall-Strike-Force-Final-Report.pdf ("Oct. 2016 Strike Force Report").

7 *See* Robocall Strike Force, *Industry Robocall Strike Force Report*, at 5 (rel. Apr. 28, 2017), *available at* https://www.fcc.gov/file/12311/download ("Apr. 2017 Strike Force Report").

8 To be sure, as the Robocall Strike Force has pointed out, "there is no single 'silver bullet' to the robocall problem," *id.* at 25. and providers need flexibility to adapt and adopt new

all sizes already have strong incentives to deploy SHAKEN/STIR on their networks, the Commission should strongly consider various additional measures to ensure universal adoption of the framework—including by taking action to facilitate the IP transition,[9] adopting regulatory safe harbors for providers that use the framework to address such calls (including through blocking), and strongly encouraging participation by providers of IP-based voice services. On the issue of governance, Comcast supports a hybrid framework such as the one proposed by the Alliance for Telecommunications Industry Solutions ("ATIS"), under which the Commission would provide initial direction but would leave the establishment and implementation of standards to an industry-led initiative—one that is cost-effective, inclusive of all stakeholders, and sufficiently flexible to adapt to evolving threats.

I. INDUSTRY EFFORTS TO REFINE AND IMPLEMENT THE SHAKEN/STIR FRAMEWORK ARE WELL ON THEIR WAY

The NOI appropriately seeks comment on the progress that has been made so far in developing and implementing the SHAKEN/STIR framework, and on the "milestones and metrics" the Commission should use "to measure the progress of adoption" in the future.[10] As an active participant in the process of developing this framework led by ATIS and the Internet Engineering Task Force ("IETF"), Comcast can attest that the industry is continuing to make significant progress and is working expeditiously towards implementation. Many of the key operational details of the SHAKEN/STIR framework have already been developed and defined;

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tools as bad actors change their tactics. But the SHAKEN/STIR framework unquestionably represents a significant step in the right direction and is the most comprehensive and effective tool currently in development for combating illegal spoofed robocalls.

9 These initiatives should include providing incentives for providers to move to IP-to-IP interconnection, so that SHAKEN/STIR authentication can be as effective as possible.

10 NOI ¶ 15.

IETF began issuing standards for STIR in October 2014,[11] and ATIS and the SIP Forum adopted the formal specification for the SHAKEN framework in January 2017.[12] Moreover, in July 2017, ATIS and the SIP Forum approved a specification that expanded on the earlier SHAKEN framework by introducing a governance model and defining procedures for managing the certification and verification process.[13] In recent months, Comcast has been actively participating in SHAKEN/STIR testbeds along with other voice providers, in an effort to work through and address any remaining logistical details before beginning to implement the SHAKEN/STIR framework for calls originating and terminating on its network.

Comcast anticipates that industry efforts to implement SHAKEN/STIR will meet several additional important milestones in the near future. As ATIS noted in a recent submission to the Commission, the guidelines for displaying SHAKEN/STIR authentication information on end-user devices are expected to be released in September 2017, and procedures for carrying out the role of "policy administrator" (the entity tasked with validating that service providers are authorized to request certificates and that certification authorities are authorized to issue

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11 *See, e.g.*, IETF, "Secure Telephone Identity Credentials: Certificates," *available at* https://datatracker.ietf.org/doc/draft-ietf-stir-certificates/.

12 *See* Joint ATIS/SIP Forum Standard – Signature-Based Handling of Asserted Information Using toKENs, Jan. 2017, *available at* https://www.sipforum.org/download/sip-forum-twg-10-signature-based-handling-of-assertedinformation-using-tokens-shaken-pdf/?wpdmdl=2813; *see also* SIP Forum, "New Specification by ATIS and SIP Forum Designed to Mitigate Robocalls and Caller ID Fraud," Feb. 1, 2017, *available at* https://www.sipforum.org/2017/02/new-specification-by-atis-and-sip-forum-designed-to-mitigate-robocalls-and-caller-id-fraud/.

13 *See* Joint ATIS/SIP Forum Standard – Signature-Based Handling of Asserted Information Using toKENs (SHAKEN): Governance Model and Certificate Managament, Jul. 2017, *available at* https://access.atis.org/apps/group_public/download.php/35256/ATIS-1000080.pdf.

certificates under the SHAKEN/STIR framework) likely will be adopted in October 2017.[14] Comcast then expects to begin limited use of SHAKEN/STIR authentication methods on its network as early as next year, and it is conceivable that, by 2019 or 2020, the industry will be in the midst of large-scale implementation of the framework by IP-based voice providers across the country.

II. COMCAST SUPPORTS THE COMMISSION'S INQUIRY INTO FURTHER EFFORTS TO PROMOTE IMPLEMENTATION OF THE FRAMEWORK

Given this rapid progress, as well as the imminent finalization of implementation details and expected early-stage deployment of SHAKEN/STIR, the Commission has issued the NOI at a pivotal moment and should take this opportunity to help drive widespread adoption of this framework. As Comcast has explained previously, the Commission's efforts to promote SHAKEN/STIR should include, among other things, speeding along the IP transition and establishing safe harbors for voice providers that block calls in reliance on this authentication framework.[15] Additionally, as the NOI correctly suggests, market-based incentives likely will play a role in motivating voice providers to implement the framework.[16] Consumers will benefit significantly from the reduction in illegal spoofed robocalls stemming from a voice provider's implementation of SHAKEN/STIR—and may well choose a voice provider based on part on whether it can effectively authenticate calls and verify the authenticity of the calling numbers as a default feature of the service. Additionally, the ability to identify and address illegal spoofed robocalls using this framework likely will result in reduced network costs for voice providers

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14 *See* Letter of Thomas Goode, General Counsel, ATIS, to Marlene Dortch, Secretary, FCC, Appendix, at 3, CG Docket No. 17-59 (filed Jun. 30, 2017) ("ATIS Jun. 30 *Ex Parte*").

15 *See* Comcast Robocall Blocking Comments at 5, 8-9.

16 *See* NOI ¶ 14.

associated with the transmission of these calls—providing another economic incentive for voice providers to participate. Indeed, once widespread implementation of SHAKEN/STIR takes hold and scammers are among the few entities whose calls are not signed and verified, the volume of illegal spoofed robocalls that actually connect to consumers will fall dramatically (because they are either blocked or not answered by consumers who will be able to see the absence of authentication information on their displays)—thus undercutting the volume-driven incentives of the bad actors placing such calls. SHAKEN/STIR generates efficiencies for traceback efforts as well; whereas current traceback methods can often involve labor-intensive and time-consuming reviews of call detail records and outreach to third-party carriers, the SHAKEN/STIR framework enables voice providers to perform traceback automatically and almost instantaneously.

Nevertheless, it is possible that these market incentives and forms of regulatory encouragement will not be sufficient to bring about universal adoption of the SHAKEN/STIR framework by all voice providers. And while the framework does not require that *all* voice providers implement SHAKEN/STIR for authentication to work for calls between *two* IP-based voice providers that have done so, a failure to adopt the framework by a significant number of providers would frustrate the goal of providing a truly *nationwide* solution for end-to-end call authentication. Indeed, widespread non-adoption of SHAKEN/STIR would risk dramatically undermining the benefits of the framework for participating providers and their customers—as scammers could try to make an end-run around the authentication system by, for instance, signing up for retail service from a carrier that does not participate in SHAKEN/STIR and placing calls that, while not fully authenticated, may not be subject to automatic blocking either. Thus, the Commission should closely monitor implementation of SHAKEN/STIR in the marketplace over the next few years, and if it finds that a significant number of service providers

are dragging their feet in adopting the framework, it should consider further methods to, at minimum, strongly encourage participation by providers of IP-based voice services.[17] More broadly, Commission action to incentivize universal adoption of SHAKEN/STIR likely would have the benefit of alleviating the substantial costs borne by consumers targeted by illegal spoofed robocalls—which, as noted above, make up a rapidly growing percentage of calls placed to consumers today.[18]

Industry efforts to implement SHAKEN/STIR also likely would benefit from Commission endorsement of the governance structure contemplated in the relevant specifications and discussed in the NOI.[19] As a general matter, Comcast supports a hybrid governance model such as that described by ATIS in a recent *ex parte* letter, under which the Commission would provide "explicit regulatory direction or implicit regulatory endorsement of an industry

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17 *See id.* ¶ 14 (asking whether "existing market incentives sufficient for the industry to adopt the authentication mechanisms specified by the STIR working group in a timely manner" or whether "the Commission [should] require, facilitate, or otherwise encourage adoption of such mechanisms"). As the NOI correctly points out, Section 251(e)(1) of the Communications Act of 1934, as amended, provides the Commission with "authority to take necessary steps to encourage or develop authentication standards for telephone calls to combat Caller ID spoofing and the robocalling it enables." *Id.* ¶ 48. That provision furnishes the Commission with "plenary numbering authority and exclusive jurisdiction over 'those portions of the North American Numbering Plan [NANP] that pertain to the United States'"—and a rule mandating participation in SHAKEN/STIR would fall within that authority by "enhanc[ing] the efficiency and security of NANP" and ensuring that "entities issuing phone numbers [can] determine whether particular phone numbers have indeed been issued, and to whom, via associations with particular certificates." *Id.* (quoting 47 U.S.C. § 251(e)). Notably, the Commission has concluded on several occasions that its numbering authority under Section 251(e)(1) allows it to apply "numbering-related requirements to interconnected VoIP providers that utilize telephone numbers." *Numbering Policies for Modern Communications*, Report and Order, 30 FCC Rcd 6839 ¶ 78 (2015); *see also id.* ¶ 78 n.281 (collecting cites to prior Commission precedent).

18 *See supra* at 1.

19 *See* NOI ¶¶ 18-32 (addressing governance issues).

approach" but would leave the governance and management of SHAKEN/STIR to a "neutral industry body representing a full range of stakeholders."[20] As ATIS aptly points out, one example of a similar hybrid model is the Administrative Council for Terminal Attachments ("ACTA"), which the Commission directed the terminal equipment industry to establish in 2000 for the purpose of publishing industry-established technical criteria for terminal equipment and maintaining a database of terminal equipment found to be compliant with such criteria.[21] The Commission required that ACTA maintain a "balanced" membership that "represent[s] all segments" of the terminal equipment industry,[22] and could consider adopting a similar mandate here. Pursuing such a hybrid approach could offer several benefits in the context of implementing SHAKEN/STIR—including, among other things, providing "[g]reater flexibility to expeditiously address evolving threats" (*e.g.*, through technological enhancements over time that providers should have the ability to implement quickly) without the need to undergo a lengthy agency rulemaking process to adjust the framework as necessary, as well as "[t]ransparency and broad buy-in based on [the] open, consensus-based structure" contemplated in the ATIS letter.[23]

The NOI also asks important questions regarding the specific roles (governance authority, policy administrator, and certification authority) contemplated in the relevant specifications for SHAKEN/STIR.[24] As noted above, the governance authority under a hybrid regime would be

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20 ATIS Jun. 30 *Ex Parte,* Appendix, at 7, 10.

21 *See 2000 Biennial Regulatory Review of Part 68*, Report and Order, 15 FCC Rcd 24944 ¶¶ 1-6 (2000).

22 *Id.* ¶ 51.

23 ATIS Jun. 30 *Ex Parte,* Appendix, at 9.

24 *See* NOI ¶¶ 18-29.

"recognized by the [Commission], but independent" and overseen by an industry-led board.[25] Comcast agrees with ATIS that the industry board should be inclusive of all relevant stakeholders—including fixed, mobile, and over-the-top voice service providers, equipment manufacturers, and third-party application developers.[26] Comcast also agrees with ATIS that the policy administrator—tasked with applying the rules set by the governance authority, ensuring that service providers are authorized to request certificates, and ensuring that certification authorities are authorized to issue certificates[27]—could be selected by the governance authority through a competitive process,[28] or the role could simply be occupied by the same entity as the governance authority. And finally, such a framework need not rely on a single certification authority to issue the certificates used to sign and verify telephone calls, as the NOI recognizes.[29] The SHAKEN/STIR framework could function effectively with many certification authorities, all competing to provide certificate-related services to voice providers—a dynamic that likely would help drive down the costs associated with participating in this framework.

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25 ATIS Jun. 30 *Ex Parte*, Appendix, at 11.

26 *See id.* at 10.

27 *See* NOI ¶ 11.

28 ATIS Jun. 30 *Ex Parte*, Appendix, at 11.

29 *See* NOI ¶ 12.

CONCLUSION

Comcast commends the Commission for continuing its inquiry into combating illegal spoofed robocalls through widespread implementation of the SHAKEN/STIR framework, and looks forward to working closely with the Commission on the measures discussed herein.

Respectfully submitted,

/s/

Kathryn A. Zachem
Beth A. Choroser
Regulatory Affairs

Francis M. Buono
Legal Regulatory

COMCAST CORPORATION
300 New Jersey Avenue, NW
Suite 700
Washington, DC 20001

Brian A. Rankin
Andrew D. Fisher
COMCAST CORPORATION
1701 JFK Boulevard
Philadelphia, PA 19103

Matthew A. Brill
Matthew T. Murchison
LATHAM & WATKINS LLP
555 Eleventh Street, NW
Suite 1000
Washington, DC 20004

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